



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/829,146

04/21/2004

Nobuaki Hashimoto

81751.0071

5088

26021

7590

01/27/2005

HOGAN & HARTSON L.L.P.

500 S. GRAND AVENUE

SUITE 1900

LOS ANGELES, CA 90071-2611

EXAMINER

OWENS, DOUGLAS W

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 01/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/829,146

Applicant(s)

HASHIMOTO, NOBUAKI

Examiner

Douglas W. Owens

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/21/04; 11/10/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

1. Claims 1 and 5 is objected to because of the following informalities: in line 5, --the-- or --an-- should be inserted between "with" and "inside". Claim 5 has the same problem in line 7. Appropriate correction is required.
2. Claim 3 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claim merely recites an intended use, with no further structural limitations.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 – 6 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 6,313,532 to Shimoishizaka et al.

Regarding claim 1, Shimoishizaka et al. teach an electronic device (Figs. 5 and 9, for example) comprising:

a semiconductor substrate (1) in which an integrated circuit is formed;
an insulating layer (20) which is formed on the semiconductor substrate and includes an elastically deformable section;

an electrode (32) which is electrically connected with the inside of the semiconductor substrate and is formed on the elastically deformable section; and

a substrate (61) on which an interconnect pattern (62) is formed, the interconnect pattern facing the electrode and being electrically connected with the electrode,

wherein the elastically deformable section is elastically deformed in a manner to be depressed under the electrode, and presses the electrode against the interconnect pattern due to elasticity.

Regarding claim 2, Shimoishizaka et al. teach an electronic device, further comprising a bump (41) formed between the electrode and the interconnect pattern, the electrode being electrically connected with the interconnect pattern through the bump.

Regarding claim 3, Shimoishizaka et al. teach an electronic device, wherein the bump includes a nickel layer (Col. 9, lines 33 – 37).

Regarding claim 4, Shimoishizaka et al. teach an electronic instrument comprising the electronic device claimed above.

Regarding claim 5, Shimoishizaka et al. teach a method of manufacturing an electronic device, comprising:

mounting a semiconductor device on a substrate on which an interconnect pattern is formed (Fig. 9);

wherein the semiconductor device includes a semiconductor substrate (1) in which an integrated circuit is formed, an insulating layer (20) which is formed on the semiconductor substrate and includes an elastically deformable section, and an

Art Unit: 2811

electrode (32) which is electrically connected with the inside of the semiconductor substrate and is formed on the elastically deformable section; and

wherein, in the mounting step, the semiconductor device and the substrate are disposed so that the electrode faces the interconnect pattern, and the elastically deformable section is elastically deformed in a manner to be depressed under the electrode.

Regarding claim 6, Shimoishizaka et al. teach a method of manufacturing an electronic device, wherein the semiconductor device further includes a bump (41) on the electrode; and

Wherein the elastically deformable section is elastically deformed through the bump.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas W. Owens whose telephone number is 571-272-1662. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 2811

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Douglas W. Owens". The signature is fluid and cursive, with the first name "Douglas" being more prominent.

Douglas W Owens
Examiner
Art Unit 2811